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Developmental Disorder of CNS

Neuro developmental disorder are impairment of the growth & development of the brain. Or CNS.

The term refres to a disorder of brain function that affects emotion, learning ability self control & memory.

Enviornmental, clamate & geo graphical factors

Causes - i Stress in Early child hood Prematurity
ii Genetic disorder
iii Immune dysfunction
iv Infectious deseare
v Nutrition, trauma

Developmental Disorder are -
i) learning disabilities
ii) Communication disorder
iii) Autism spectrum disorder
iv) ADHD
v) Developmental coordination disorder

learning disabilities - Disorder that affect one is ability to understand.
A child with learning disabilities may have trouble learning ~~or using~~ certain skills, including reading writing, ~~listening~~, doing mathamitical calculations.

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types of learning disabilities

Dyslexia – Reading disability, with this problem a child may not understand ~~letters~~ letters, sentences & paragraphs.

Dysgraphia – Writing disability, difficulty of writing within a certain space.

Dyscalculia – Disability in calculation of matho

ii) Communication Disorder –
Communication disorder includes prop problems related to speech, language & auditory processing.

Some cause of communication disorder include
- hearing loss, neurological disorders
- bran injury, mental retardation
, Drug abuse, ideopathic.

iii) Autism Spetrum Disorder –
ASD is a life long developmental disability charactrized by difficulties in social intraction, communication.
Core problem i) Difficulty with socialization & communication.
ii) Odd interests & behaviour.
iii) Problem with attention & self regulation.

Causes – Genetic, Muscular dystrophy
Down syndrome &
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Causes - Genetics
Muscular dystrophies
Down's syndrome
Cerebral palsy

iv) Attention Deficit Hyperactive Disorder (ADHD)

- ADHD is a behavioural condition that makes focusing, in everyday activities difficult.
- People with ADHD typically have trouble in getting focused, making plans & thinking before acting.
- children with ADHD are disturbed unfocused & aggressive.

v) Developmental coordination Disorder - Also known as developmental dyspraxia, is a chronic neurological disorder begining in childhood that can affect planning of movements & co-ordination bcz brain massages not being accurately transmitted to the body.

Screening of Developmental delay

The screening test is meant to identify children who might have problem, & in need of further evaluation.

a) Battelle Developmental inventory screening test. (BDIST)
- Used to screen children aged 12-96 months, using a combination of direct assesment, observation & parental interview

b) Baley Infant neurodevelopmental screener (BINS)

~~Bat~~ BINS is designed for screening high risk infants aged 3-24 ~~months~~ months

Baised upon BINS score that is obtained from obeservation & Assessment.

c) Child developmental Inventories (CDI)

CDI measures a childs development in eight areas namely - social self help, gross moter, fine moter expressive language, language comprehension letters & numbers.

d) Denver Developmental screening test. (DDST)

DDST is a tool that combines direct observation & parental report.

e) Trivandrum developmental screening test

f) ICMR's scale

g) Good Enough Harris drawing test

Risk Babies - Any neonate with

low birth weight
Very low birth weight
premature delavery
Over time delavery
Inter uterine growth restriction

- Most neonatal mortality occour with in 1st hour
- The highest risk of neonatal & infant mortality occours is the neonate weight is less than 1000 gm at birth

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Mild head injuries

Minimum brain damage

There are those type of head injury in which there is a minimal damage to the neuroanatomical structure with slight or no permanent impairment.

These are commonly encountered type of head injury.

Infact repeated minor injuries over a time have been responsible for gradual loss of neurological or coagnative functions with marked cerebral atrophy.

Due to damage in brain stem, reticular formation & some extent the cerebellum.

Symptoms - Head ache
dizziness
Increased fatiquability
decrease consentration power
Poor memory

Diagnosis - loss of concious well for less then 20min
Glasgow coma scale of more then 13
No abnormality on, CT Scan.

Neurodevelopmental Approaches

- This approaches was developed by Dr karl Bobath & his wife Berta Bobath.
- These approaches are developed for more effective treatment of children with cerebral palsy.
- The problem in cerebral palsy occours due to result of abnormal postural reflexes & tone which interfere with the development of higher level reaction & equilibrium responses. Normal reflex pattern
- As this technique was getting developed it was found that there is a need of analysis of movement before implanting the treatment Analysis of movement was based process. on observation & comperasion with normal developmental patterns.
- Abnormal movement pattern were described as premature reflex responces; which lost there higher influences.
- A process of inhibiting ~~normal~~ Abnormal responces ~~was~~ ~~(inhibited~~ with facilitation technique to produce normal ~~responce~~ control.

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Study

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2 Sensory Integration -
It has been proved that sensory system has facilitatory & inhibitatory influence on motor system.

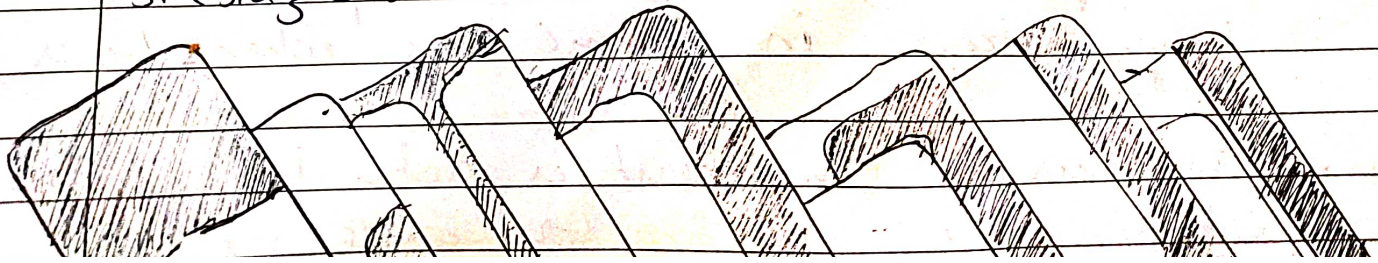
Motor system dosent function independently but needs input from verious sensory system.

Sensory integration is the term used to ~~integrate~~ indicate therapeutic process, which combine verious forms of sensory inputs like cutneous sensation proprioceptors & visual etc to get desired motor response.

3 PNF — PNF is an approach to therapeutic exercises which involve functionally based diagonal pattern of movemet, with technique of neuromuscular facilation to evoke motor responces.

4) Motor relearning Program (MRP)

- According to this concept development of a functional task can be achived best when the task itself is practiced.
It is performed by patient themselves.
- MRP is very effective in patient with stroke & can be started as soon as the general medical condition of patent stabilizes.



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Motor relearning program is practiced in 4 steps.

Step 1 - It involves observation of patient's performence of functional task.

Every functional task has various components that is necessory ~~towards~~ to achive that task.

Thus of when the therapist observes the performence patient, he is in positon to list out those components that are missing from ~~patient~~ patient's performence.

Then he needs to analize the reason of missing components..

Step 2 - It involves practice of missing components using various visuals, verbal & mannual feed back, under the guidence of therapiest.

Step -3 - Involves practice of ~~acta~~ whole task using the same feedback.

Step 4 Consist of tranning during which patient should maintain consistency in practice. The patient is need to practice the learned task in home or when he is alone.

Once the missing component is activated immediately the patient should practice the whole activity.

Biofeedback

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The biofeed back is used in rehabilitation of neurological patient is EMG biofeed back.

- It is done with the help of surface EMG electrodes which is placed on the muscle or muscle group that needs to be activated or inhibeted.

- with the introduction of computerised machine, the display wave represent the average responce of all motor unit, which is recorded by surface electrode.

The biofeed back machine can be used to strengthen ~~week~~ weak muscle ~~week ness~~ as well as relex hypertonic muscle.

for strengthning process the patent is instructed to concentrate ~~the~~ on increasing the size of displayed wave, wharies for relexing of spastic muscle the patent is instructed to try to reduce the size of wave.

EMG biofeed is successfully cesed in rehabilitation cases of LMN type like neuropathy & peripheral nerve injury & UMN type like stroke.

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Burnstrome technique -

This technique was developed by burnstrome produce motion by provoking primetive movement pattern.

This technique is quit extensively used to develop tone in flaccid stage of hemiplagia. & ~~in pure pre pyramidal~~ lesion.

Roods technique -

This was mainly done to produce porpowerful muscular contractions by stimulating the skin, by stroking, brushing, iceng ~~teaching~~ heating.

The stimlus given through skin has fascilitatory & inhibitatory responce.

Bobath technique - This is based on normal movement of neuro developmental approach.

The main aim is to prevent ~~normal~~ abnormal movement & fascilitate normal movement.

Vojtas technique - Vojta used position of reflex like crawling & rolling.

He proposed that placing the child in these positions & stimulation of key points on the body would enhance CNS development.